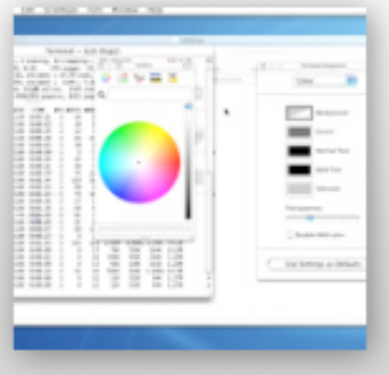
Open Source at Apple

Session 102



Overview

Jordan Hubbard
Manager, BSD Team
jkh@apple.com

Introduction

- Overview of our open source projects and activities
- Where we're going
- How you can participate

Open Source Resources

- http://developer.apple.com/darwin/
  - Apple's official open source site—latest bits, etc.
- http://opendarwin.org/
  - Primary site for open source collaboration
  - OpenDarwin.org now 1 year old!
- http://fink.sourceforge.net/
- http://www.freebsd.org/

OpenDarwin.org

- Providing Darwin stand-alone releases for PowerPC and x86
- Also providing SRPMs which correspond to released bits
- Darwinports project
- http://packages.opendarwin.org
  - Packaged 3rd-party software

Open Source Access

- Project types
  - "On-cycle"—in sync with commercial releases
    - Example: Darwin
  - "Off-cycle"
    - Streaming Server, Rendezvous, gdb, gcc, CUPS, HeaderDoc
- Source available via WebDAV and CVS
- Better correspondence to Mac OS X releases/updates
- Continuously adding to open source software base

Ongoing Commitment to Open Source

- Safari Components
  - WebCore (KHTML), JavaScriptCore (kjs)
- X11.app and X11 SDK
- “BSD” component upgrades
  - Tcl 8.4.1
  - PERL 5.8.1
  - Samba 3.0
  - Libc sync-up with FreeBSD 5.0
  - And much more…

Up Next

- OpenDarwin Project
- Safari Components
- Printing Software
- XFree86
- OpenOffice.org
- OpenPlay

OpenDarwin Project

Kevin Van Vechten
Full-time Darwin Engineer
kvv@apple.com

OpenDarwin

- A community-supported site outside Apple
  - Hosted by Internet Software Consortium
  - Provides support for Darwin users
  - Provides resources for Darwin developers

Goals

- Keep synchronized with Mac OS X (Apple Darwin)
- Provide binary releases of Darwin and components
- Provide a build system for Darwin
- Staging area for external development
  - systrace, FreeBSD, commands, …

Open Collaboration

- Host projects relevant to Darwin
- Developers can join projects as committers
- Mailing lists, Bug Tracking, CVS, News, …

DarwinPorts

- Port open source software to Darwin
- Easy installation/removal/upgrading
- Provide binary packages of software
  - Installer.app compatible (Mac OS X)
- Cocoa user interface (Mac OS X)

Contributing

- OpenDarwin wants you!
- Report bugs
- Propose projects and features
  - discuss@opendarwin.org
- Submit code and documentation
  - hackers@opendarwin.org

Roadmap

704 Intro to QuickTime Streaming Live and prerecorded streaming solutions	**Haight/ Ashbury** **Tues., 2:00pm**
105 Rendezvous Zero configuration IP networking	**Marina** **Wed., 5:00pm**
304 GCC in Depth Apple's implementation of the GNU Compiler	**Mission** **Wed., 3:30pm**
613 Migrating UNIX SysAdmin Tools Leveraging your script library in Mac OS X	**Nob Hill** **Wed., 3:30pm**

Safari

Don Melton
Internet Technologies Manager

Safari

- Millions of downloads and updates
- Innovative features
  - Superior user experience
- Solid quality
  - Real-world web compatibility
- Impressive performance
  - Fastest web browser on Mac OS X
- Underlying technology is now built into Mac OS X

Based on Open Standards

- W3C standards compliance
- Open Source from the KDE project
- WebCore
  - Adapter built on KHTML from KDE
- JavaScriptCore
  - Wrapper around KJS from KDE
- Other Open Source components
  - Expat XML parser, PCRE library, and some Mozilla code

Why Open Source?

- It’s all about the technology
  - Small
  - Fast
  - Easy to modify

Community Collaboration

- Working with KDE team
- Giving back fixes and enhancements
- Sharing ideas and plans for the future
- You can contribute too
  - WebCore and JavaScriptCore
  - KHTML and KJS

Roadmap

403 Safari Overview High-level overview of Safari technologies	**Presidio** **Tues., 2:00pm**
411 Safari Technology and Web Standards Taking full advantage of Safari's HTML renderer	**Nob Hill** **Wed., 10:30am**
418 Advanced Foundation URL APIs Powerful and flexible web services	**Nob Hill** **Wed., 3:30pm**

Roadmap

110 Overview of Networking APIs
High level overview of Networking APIs

Mission
Thur., 10:30am

420 Advanced WebKit APIs
Using HTML rendering capabilities in your app

Mission
Fri., 9:00am

112 CFNetwork In Depth
CF classes to provide network services

Pacific Heights
Fri., 5:00pm

Printing

Richard Blanchard
Engineer/Scientist, Printing
rblanchard@apple.com

Darwin Printing

- Jaguar
  - Based on CUPS 1.1.15
  - Important security and bug fixes moved from mainline CUPS to the Darwin 1.15 code base
    - Rolled out in Software Updates and Security Updates
    - Released source is here:

http://developer.apple.com/darwin/projects/cups/

Darwin Printing

- Panther
  - Based on CUPS 1.1.19 (or later)
    - Support for Java, Perl, and PHP
    - Fax
    - IPP collections
  - Improved PPD support
    - Stricter PPD loading code with better error messages
    - Access to more PPD keywords through the API

Open Source Printer Drivers

- Gimp-Print
  - http://gimp-print.sourceforge.net/MacOSX.php3
  - Supports 515+ printer models
  - Epson, HP, Canon, and Lexmark
- HPIJS
  - Supports 212+ HP printer models
  - http://hpinkjet.sourceforge.net/
- “Mac OS X Printing at LinuxPrinting.org”
  - Installer packages for Gimp-Print, HPIJS, Imagewriters, Brother and PS Level 1 printers

Fax

- efax software
  - Small ANSI C/POSIX program that sends and receives faxes using any fax modem (Class 1, 2 or 2.0)
  - http://www.cce.com/efax/

Roadmap

210 Mac OS X Printing Update
Current and upcoming changes to the printing system

Mission
Thurs., 3:30pm

XFree86

Torrey T. Lyons
XFree86 Technical Lead
torrey@mrcla.com

XFree86 Darwin Evolution

Initial Darwin Support

4.0.2

Runs in parallel with Aqua in full screen mode

4.1

Runs rootless on Aqua desktop

4.2

Faster 2-D and hardware-accelerated OpenGL

4.3

Jan 01

Jan 02

Jan 03

Jan 04

Current Work

- X11 for Mac OS X changes merged into XFree86 CVS
- Xplugin API allows open source developers to write high performance X servers
- Allow multiple visuals of various classes and depths
- Support for new XFree86 standards (RandR, Xcursor, etc.)
- Better IOKit mode support

Roadmap

201 Mac OS X OpenGL In Depth Architectural overview and OS-level interfaces	**Nob Hill** **Tues., 2:00pm**
207 Quartz 2D In Depth Mac OS X's powerful 2D graphics engine	**Presidio** **Thurs., 9:00am**

OpenOffice.org

Ed Peterlin
OpenOffice.org Contributor
ed@dashboardbuddha.com

Growing Popularity

- Over 8.5 million downloads in past 2 years
- 150,000 downloads of Mac OS X Final Beta
  - Rate of 30,000 downloads per month
- 70,000 registered community users

Cross-platform

- Mac OS X, FreeBSD, Win32, Solaris, Linux-x86/PPC, IRIX
- Full Unicode support
- Open XML-based file formats
- Data exchange with popular productivity applications

OpenOffice.org 1.0

- For Mac OS X and Darwin
- X11 windowing with Apple X11 or XFree86
- Available in 20 languages
- 7.5 million lines ported in last year and a half!

draw demo.sxd – OpenOffice.org 1.0.3

File Edit View Insert Format Tools Modify Window Help

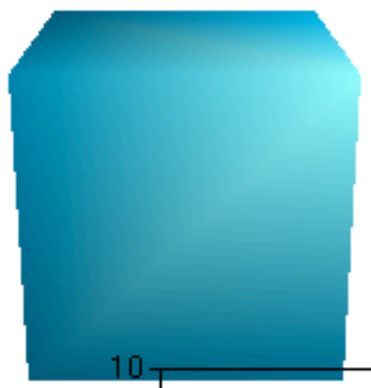
file:///Users/peterlin/Desktop/draw%20demo

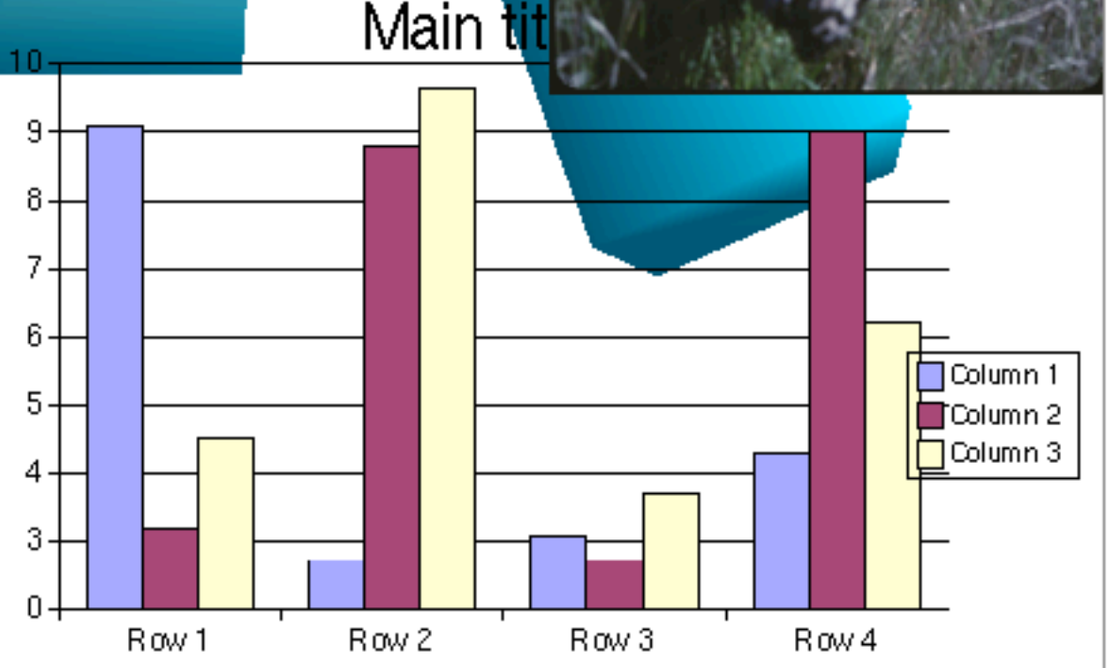
0.00" Black Color Blue 7

Graphics Styles

Default
Dimension Line
First line indent
Heading
Heading1
Heading2
Object with arrow

All Styles





We’re Not Stopping Yet!

- Version 1.1
  - Enhanced macros
  - Vertical and right-to-left languages
- Quartz/CoreGraphics to replace X11
- Tighter Mac OS X integration
- Aqua user interface

Untitled1 – NeoOffice 0.0

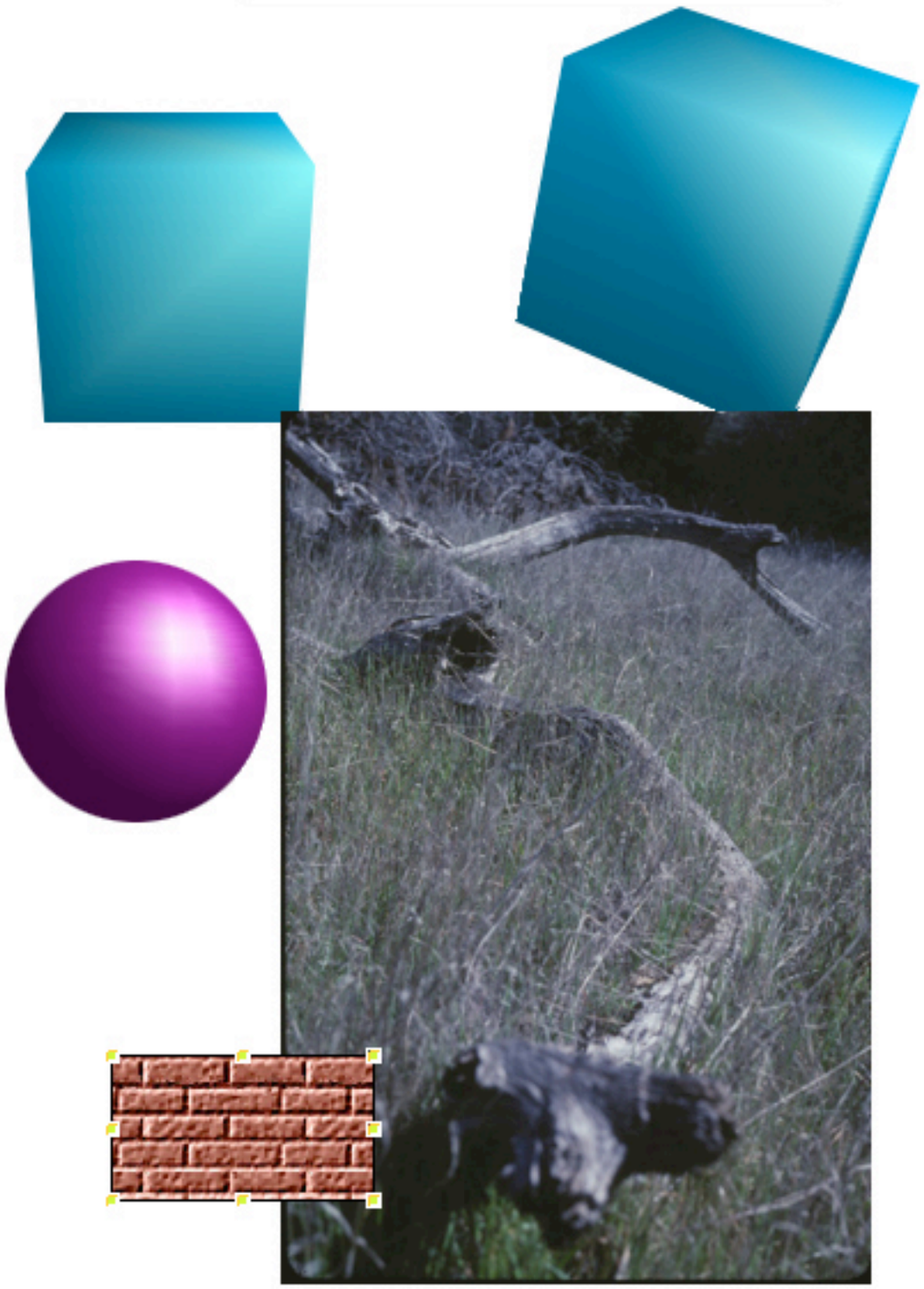
0.00cm

Black

Bitmap

Brownstone

Graphics Styles



Slide 1

Rectangle selected

24.25 / 27.26

5.29 x 2.94

76%

Slide 1 / 1

Default

Help Us Define the Future

- We need help of all kinds
  - UI design experts
  - Cocoa developers
  - Courageous testers
  - Evangelists

http://mac.openoffice.org

OpenPlay

Lane Roathe
CTO, United Developers
lane@udgames.com

Cross-platform, Standards-based

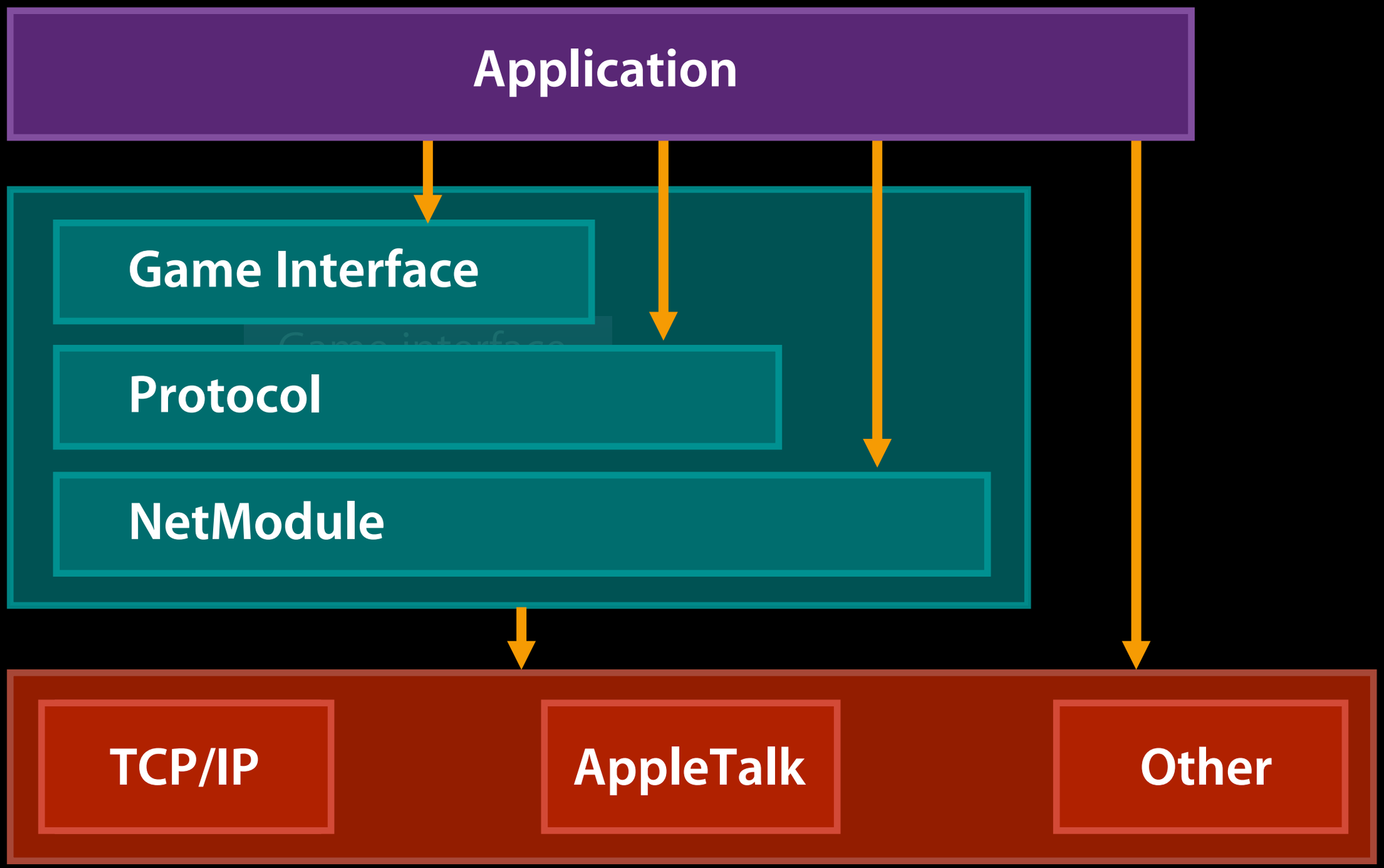
- Runs on
  - Mac OS X, Mac OS, Windows, Linux
- Modular communications layer
  - TCP/IP, AppleTalk
  - Flexibility to add other protocols

Very Good Adoption

Titles include:

3D Bridge Deluxe
Age of Empires II
Alpha Centauri
Alien Crossfire
Burning Monkey Puzzle Lab
Classic Cribbage
Colin's Classic Cards
Combat Mission: Beyond Overlord
Combat Mission: Barbarossa to Berlin
Galactica: Anno Dominari
Gamesmith
Last Contact
Links Championship Edition
Links LS 2000
Stronghold
Risk II
Total Annihilation
Tony Hawk Pro Skater 2
Oberin
Scrabble
Total Annihilation
Battle for the Universe
Myth, the Fallen Lords
Myth II, Soulblighter
Myth III, the Wolf Age
Star Wars, Galactic Battlegrounds
TacOpsCav
TacOps—U.S. Army release

API Layers


Application
Game Interface
Protocol
NetModule
TCP/IP
AppleTalk
Other

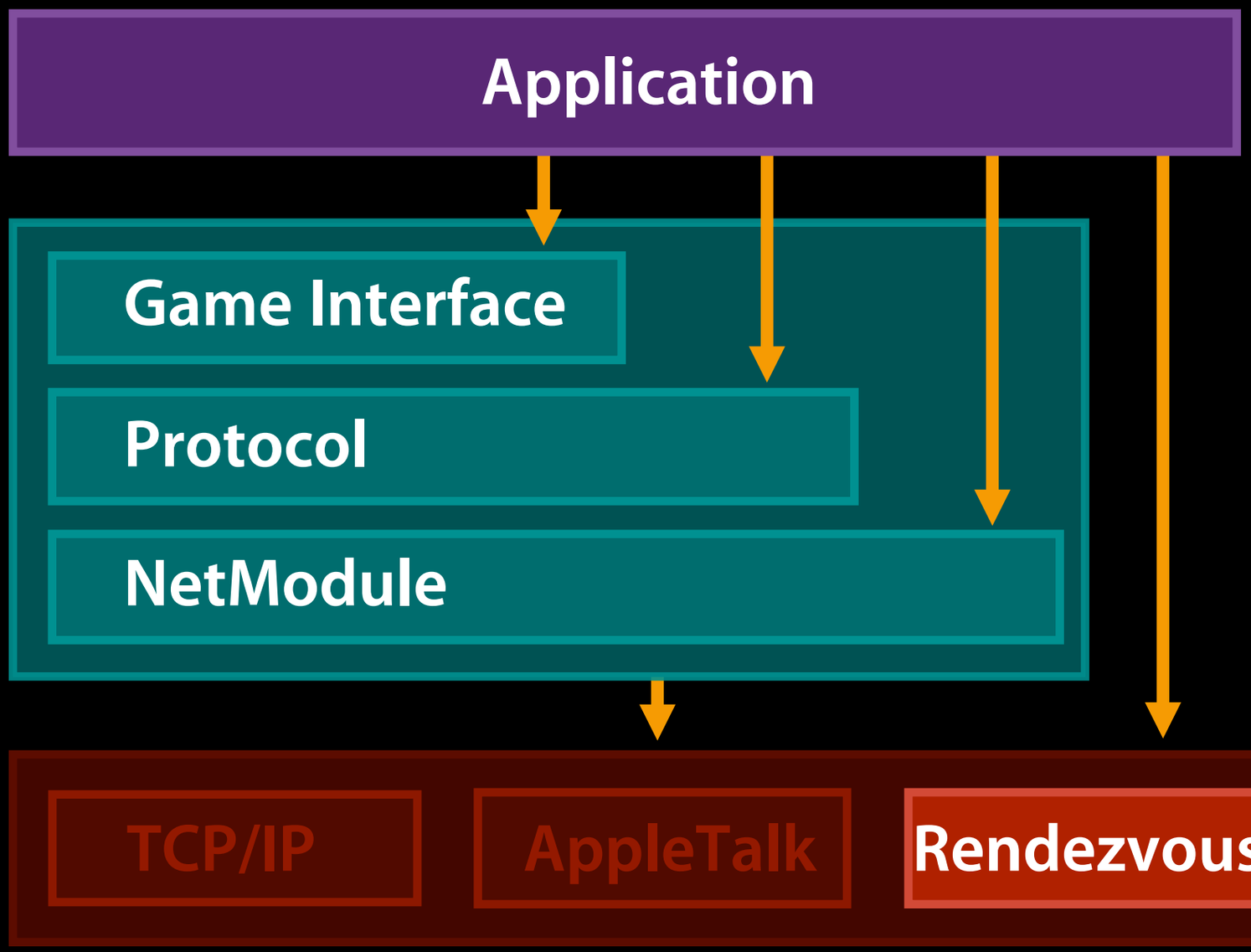
Game Interface

- Easy way to add networking to games/apps
- Player management
- Packet management
- Supports:
  - Mac OS X, Mac OS, Windows, Linux

Protocol Interface

- Low-level API for real-time applications
- Protocol-agnostic plugin design
- IP for all platforms
  - Plus AppleTalk for Mac OS

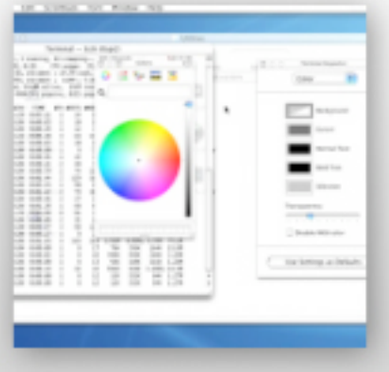
Networking Interface



- Plugin design
- Single API to handle diverse network protocols
- Now with Rendezvous!

Roadmap

110 Networking Overview of Mac OS X Networking APIs	**Mission** **Thur., 10:30am**
112 CFNetwork In Depth Technologies inside CFNetwork and related APIs	**Pacific Heights** **Fri., 5:00pm**
420 Internet Technologies Advanced WebKit APIs	**Mission** **Fri., 9:00am**



Q&A

Craig Keithley
I/O Technology Evangelist
keithley@apple.com

http://developer.apple.com/wwdc2003/urls.html

WWDC 2003

Worldwide Developers Conference